A New Gadiform Fish from the Continental Slope off Southeastern Australia

T. R. COWPER[1]

THE SPECIMEN which is here described was foul-hooked while longlining from the F.R.V. "Derwent Hunter" on the continental slope east of Tasmania in February 1953, and, although this area has been fished on a number of occasions subsequently, no further specimens have been taken. Unfortunately, as a result of being foul-hooked, the abdominal wall of the specimen was damaged; anteriorly below the origins of the pectoral fins and laterally on the left hand side, the former injury being apparent in Figure 1.

It is assigned to the genus *Lepidion* Swainson (1838) of the family Moridae because it exhibits the following characters: an elongate, compressed body; scales cycloid, covering whole of the body, head, and bases of fins; snout short and blunt in profile; maxilla extending to vertical below eye; barbel on chin; fine teeth in bands on both jaws; two dorsal fins narrowly separated; first dorsal fin with anterior ray filamentous and produced; anal fin single, deeply indented; caudal subtruncate; ventrals narrow, of seven rays, the two uppermost being long and filamentous. *Lepidion* was transferred from the family Gadidae to Moridae by Svetovidov in 1948.

Though this specimen has a number of characters in common with other members of the genus it has not been possible to relate it to any one of them. The characters which are recurrent in the majority of descriptions of members of the genus (Gunther, 1862, 1887; Johnson, 1862; Goode and Bean, 1895; Franz, 1910; Gilchrist, 1922; Barnard, 1925; Tanaka, 1927; Svetovidov, 1936; Maul, 1952) have been selected for purposes of comparison in establishing this specimen as a new species.

Lepidion microcephalus, sp. nov.
Figs. 1, 2

Head comparatively small, being 5.75 in the total body length and 1.75 in the distance between the origin of the ventral fin and anus. Eye large, 3.125 in the head, 1.25 times the length of the snout, twice that of the barbel, and 1.66 that of the interorbital width. Maxilla extending below the anterior third of the orbit. Numerous fine teeth in bands on the premaxilla and mandible. Lower jaw shorter than the upper. Snout almost square in profile. Posterior nostril considerably larger than the anterior which has an elevated, semitubular border posteriorly. Greatest depth of body 5.25 in the total length and occurring below the 8–9th ray of the second dorsal. First dorsal fin of 5 rays, the anterior ray long and filamentous being 1.33 times the head length. Base of first dorsal equal to least depth of caudal peduncle. Second dorsal fin of 54 rays having its longest rays in the anterior half and in the posterior portion in the region of the 42nd ray. Ventral fins originating under the posterior 0.4 of the head, close together, having 7 rays, the upper two being long and filamentous, the lower of these being the longer. Length of ventral fin exceeds that of the pectoral. Pectoral fin of 21 rays, originating anterior to the vertical from the origin of the first dorsal and extending to the vertical below the 5th ray of the second dorsal. Anal fin of 46 rays, originating under the vertical from the 14th ray of the second dorsal, having

[1] C.S.I.R.O. Division of Fisheries, Cronulla, New South Wales, Australia. Manuscript received August 31, 1955.

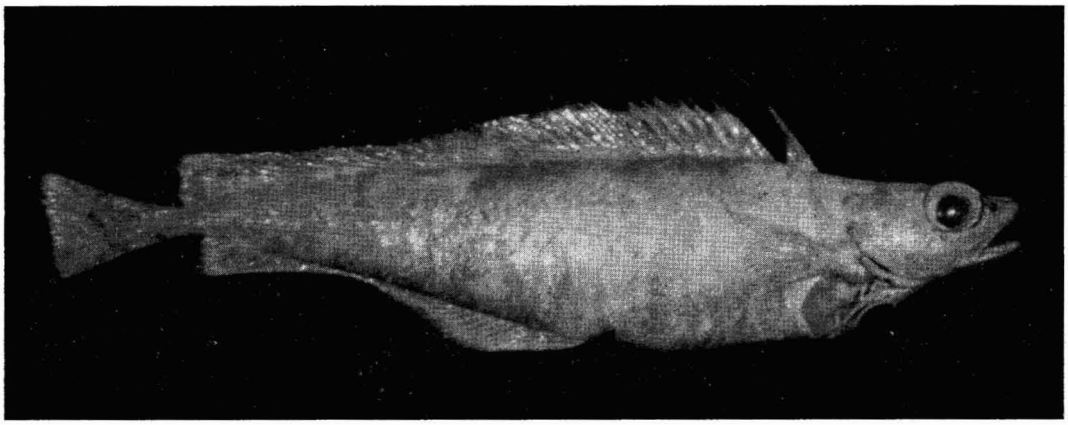

FIG. 1. *Lepidion microcephalus*, sp. nov. Holotype in Tasmanian Museum. Type locality: 12 miles east of Schouten Is., Tasmania, 400–420 fm.

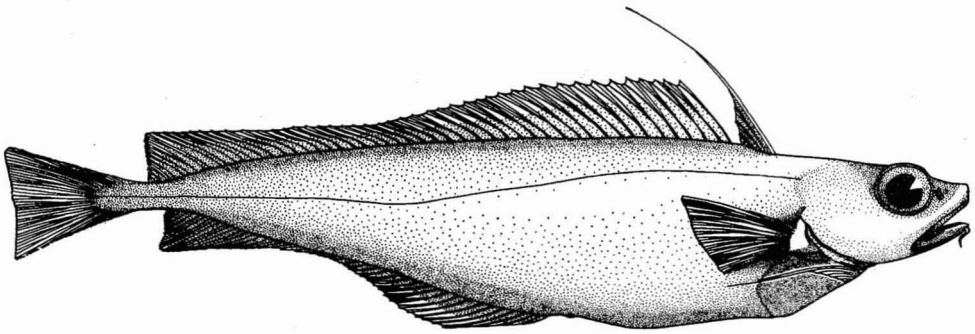

FIG. 2. *Lepidion microcephalus*, sp. nov. Drawing to show details of structure.

its longest rays in the anterior quarter and in the posterior portion in the region of the 35th ray; median rays considerably shorter producing a pronounced indentation in that portion of the fin. Caudal fin of 42 rays, subtruncate, barely emarginate. Lateral line originating at back of head above posterior edge of operculum and descending posteriorly to a point above the anterior 0.33 of the anal fin from which point it runs parallel with the main axis to the end of the caudal peduncle. Thirteen or 14 scales between the first dorsal fin and lateral line; 180 oblique rows of scales in the lateral line. Scales small, cycloid, covering head and origins of all fins. Colour on capture, mottled pinkish brown on grey with black edges to the second dorsal and anal fins. Radial formula: D.5/54; A.46; P.21; V.7; C.42.

DISCUSSION

In this specimen the head length is relatively less than that of all other described members of the genus. The eye diameter is relatively greater than that of all others but *L. eques* (Günther) and *L. lepidion* (Risso) with which it closely corresponds. The depth of body is relatively greater than that of *L. inosimae* (Günther) and less than that of all others with the exception of *L. natalensis* Gilchrist and *L. schmidti* Svetovidov with which it agrees. The length of snout is relatively less than that of all others but *L. eques*, *L. natalensis*, and *L. ensiferus* (Günther). The

relative distance between the root of the ventral fins and anus, when expressed as a fraction of the head length, is considerably greater than that of all other described members of the genus. The number of scales in the lateral line is greater than that of *L. natalensis*, *L. lepidion*, and *L. modestus* (Franz), fewer than that of *L. guentheri* (Giglioli), *L. oidema* (Tanaka), and *L. capensis* Gilchrist, but equal to that of *L. eques*. The number of scales in the distance between the first dorsal fin and lateral line is fewer than that of all other members of the genus but *L. lepidion*, with which it agrees. The radial formula is different from that of all others described.

This Australian specimen cannot be identified from the key contained in a synopsis of the genus (Norman, 1935), though its close affinity to the group containing *L. lepidion* and *L. eques* is indicated. It is excluded from this group, however, by the relative depth of the caudal peduncle, and from the contained species by the radial formula, relative length of head, relative length of filamentous rays of ventrals and first dorsal, shape of caudal, and by scale counts along the lateral line and between first dorsal fin and lateral line.

From the foregoing then it would seem that, although the Australian specimen has affinities with most other members of the genus, and more particularly with *L. eques* and *L. lepidion*, the differences, in radial formula, body proportions such as relative head length and eye diameter, together with scale counts, are real and therefore separate it from all other members of the genus.

Holotype

Taken 12 miles east of Schouten Island, Tasmania, from 400–420 fathoms and deposited in the Tasmanian Museum. Registered No. 13225/D160. Total length, 451 mm.

ACKNOWLEDGMENT

The author wishes to thank Mr. I. S. R. Munro of the C.S.I.R.O. Division of Fisheries for advice and helpful criticism in the preparation of this paper.

REFERENCES

BARNARD, K. H. 1925. A monograph of the marine fishes of South Africa. Part I. *So. African Mus., Ann.* 21: 1–418, 18 figs., 17 pls.

FRANZ, V., VON. 1910. Die Japanischen Knochenfische der Sammlungen Haberer und Doflein. *Bayer. Akad. der Wiss., Abhandl., Suppl.* 4: 1–135, 11 pls.

GILCHRIST, J. D. F. 1922. Deep sea fishes procured by the S.S. "Pickle." Part I. *Union So. Africa, Fish-Mar. Biol. Survey, Rpt.* 2 (Spec. Rpt. 3): 41–79, 6 pls.

GOODE, G. B., and T. H. Bean. 1895. *Oceanic ichthyology.* xxxv + 553 pp., atlas. Smithsonian Institution, Washington.

GÜNTHER, A. 1862. *Catalogue of the fishes in the British Museum.* Vol. 4, xxi + 534 pp. British Museum, London.

——— 1887. Report on the deep sea fishes collected by H.M.S. Challenger during the years 1873–1876. Report on the Scientific Results of the voyage of H.M.S. Challenger . . . Vol. 22, lxv + 335 pp., 73 pls. Great Britain, Edinburgh, London and Dublin.

JOHNSON, J. Y. 1862. Notes on rare and little known fishes taken at Madeira. *Ann. and Mag. Nat. Hist.* III, 10(57): 166–169.

MAUL, G. E. 1952. Monografia dos peixes do Museu Municipal do Funchal. *Mus. Munic. Funchal, Bol.* 6 (Art. 15 & 16): 18–23.

NORMAN, J. R. 1935. Coast fishes. Pt. I. The South Atlantic. *Discovery Reports.* Vol. 12, 55 pp. Cambridge University, Cambridge.

SVETOVIDOV, A. N. 1936. *Lepidion schmidti* eine neue fischart. *Zool. Anz.* 113: 266–269.

——— 1948. Fishes, in Fauna of the U.S.S.R. Vol. 9, pt. 4, 221 pp., 72 pls. Academy of Science U.S.S.R., Moscow, Leningrad.

TANAKA, S. 1927. *Figures and descriptions of the fishes of Japan* . . . Vol. 41 [Vol. 3], 24 pp. [785–808], 2 pls. Daichi shoin, Tokyo.